Table S1. Powder X-ray diffraction data (*d* in Å) for belomarinaite.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***I*meas, %** | ***d*meas, Å** | ***I*calc, %** | ***D*calc, Å** | ***hkl*** |
| 7 | 4.851 | 7 | 4.857 | 100 |
| 42 | 4.018 | 28 | 4.024 | 101 |
| 16 | 3.586 | 15 | 3.593 | 002 |
| 68 | 2.885 | 57 | 2.886 | 102 |
| 100 | 2.803 | 100 | 2.804 | 110 |
| 5 | 2.611 | 5 | 2.612 | 111 |
| 6 | 2.428 | 5 | 2.429 | 200 |
| 12 | 2.392 | 11 | 2.395 | 003 |
| 9 | 2.299 | 7 | 2.301 | 201 |
| 44 | 2.011 | 42 | 2.012 | 022 |
| 5 | 1.795 | 5 | 1.796 | 004 |
| 13 | 1.635 | 14 | 1.635 | 212 |
| 12 | 1.619 | 12 | 1.619 | 300 |
| 8 | 1.512 | 9 | 1.513 | 114 |
| 9 | 1.403 | 11 | 1.402 | 220 |

\*Reflections with *I* > 4% are given

Table S2. Atom coordinates, site multiplicities (*Q*), equivalent displacement parameters (*U*eq, Å2) and occupancies of the *M* sites for belomarinaite.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Site** | ***x/a*** | ***y/b*** | ***z/c*** | ***U*eq** | ***Q*** | **eref** | **Site occupancy** |
| *X* | 0 | 0 | 0.0004(6) | 0.0357(4) | 1 | 19.00 | K |
| *M* | 0 | 0 | 0.5077(10) | 0.0221(6) | 1 | 11.00 | Na |
| *Y*1 | 0.6667 | 0.3333 | 0.6868 (4) | 0.0069(7) | 1 | 10.95(1) | Na |
| *Y*2 | 0.3333 | 0.6667 | 0.3069(4) | 0.0381(8) | 1 | 18.53(1) | K |
| *T*1 | 0.3333 | 0.6667 | 0.7655(3) | 0.0156(4) | 1 |  | S |
| *T*2 | 0.6667 | 0.3333 | 0.2356(3) | 0.0205(6) | 1 |  | S |
| O1 | 0.6185(10) | -0.1907(5) | 0.7053(7) | 0.050(2) | 1 |  |  |
| O2 | 0.3333 | 0.6667 | 0.9443(12) | 0.068(3) | 1 |  |  |
| O3 | 0.8062(5) | -0.3866(10) | 0.3114(10) | 0.067(2) | 1 |  |  |
| O4 | 0.6667 | 0.3333 | 0.0223(12) | 0.028(1) | 1 |  |  |

\**U*eq is defined as one third of the trace of the orthogonalized *Uij* tensor.

Table S3. Anisotropic displacement parameters (Å2) for belomarinaite

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Site** | ***U*11** | ***U*22** | ***U*33** | ***U*12** | ***U*13** | ***U*23** |
| *X* | 0.0429(5) | 0.0429(5) | 0.0214(6) | 0.0214(3) | 0 | 0 |
| *M* | 0.0185(6) | 0.0181=5(6) | 0.0294(13) | 0.0092(3) | 0 | 0 |
| *Y*1 | 0.0355(9) | 0.0355(9) | 0.0432(18) | 0.0178(4) | 0 | 0 |
| *Y*2 | 0.0060(7) | 0.0060(7) | 0.0088(14) | 0.0030(4) | 0 | 0 |
| *T*1 | 0.0138(5) | 0.0138(5) | 0.0193(9) | 0.0069(2) | 0 | 0 |
| *T*2 | 0.0179(5) | 0.0179(5) | 0.0259(15) | 0.0089(3) | 0 | 0 |
| O1 | 0.026(2) | 0.075(3) | 0.039(2) | 0.013(1) | 0.003(1) | 0.002(2) |
| O2 | 0.096(5) | 0.096(5) | 0.014(3) | 0.048(2) | 0 | 0 |
| O3 | 0.049(2) | 0.033(3) | 0.115 (5) | 0.016(1) | -0.027(1) | -0.055(3) |
| O4 | 0.039(2) | 0.039(2) | 0.007(2) | 0.019(1) | 0 | 0 |

Table S4. Selected interatomic distances in the crystal structure of belomarinaite

|  |  |  |
| --- | --- | --- |
| *X* | O1 (3x) | 2.8139(1) |
|  | O3 (3x) | 2.9290(1) |
|  | O4 (3x) | 3.2422(1) |
|  | O2 (3x) | 3.2601(1) |
|  |  | <3.061> |
| *M* | O1 (3x) | 2.3283(1) |
|  | O3 (3x) | 2.3547(1) |
|  |  | <2.341> |
| *Y*1 | O4 | 2.4145(1) |
|  | O1 (6x) | 2.8175(2) |
|  | O3 (3x) | 3.0102(1) |
|  |  | <2.835> |
| *Y*2 | O2 | 2.5759(1) |
|  | O3 (6x) | 2.8171(2) |
|  | O1 (3x) | 3.1859(1) |
|  |  | <2.903> |
| *T*1 | O2 | 1.3113(1) |
|  | O1 (3x) | 1.4503(1) |
|  |  | <1.415> |
| *T*2 | O3 (3x) | 1.4653(0) |
|  | O4 | 1.5279(1) |
|  |  | <1.481> |